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CARDIOVASCULAR FLASHLIGHT

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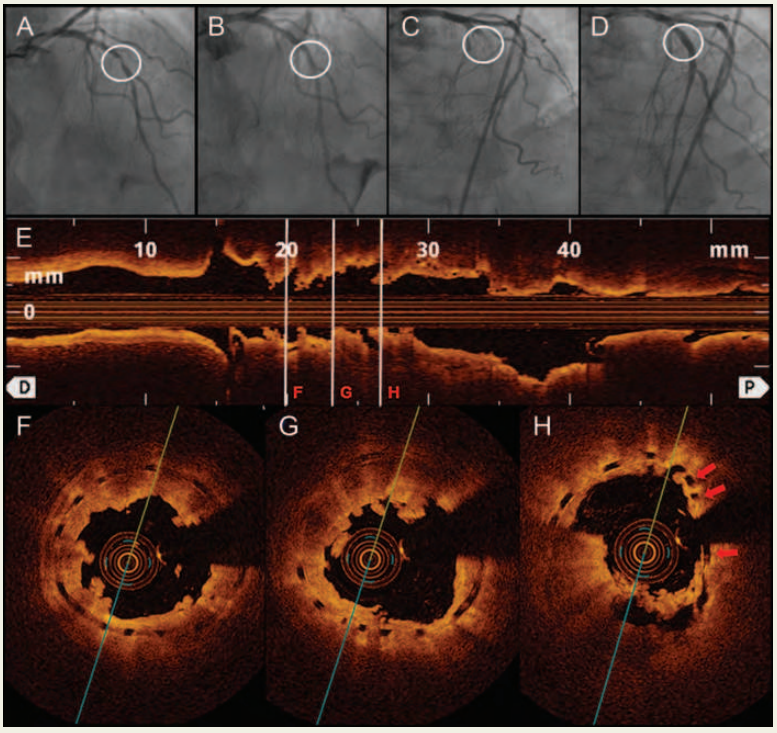
Acute thrombosis of bioabsorbable scaffold in a patient with acute coronary syndrome

Milosz Jaguszewski, Christophe Wyss, Jasmina Alibegovic, Thomas F. Lüscher, and Christian Templin*

Cardiology, Cardiovascular Center, University Hospital Zurich, Raemistr. 100, 8091 Zurich, Switzerland

* Corresponding author. Tel: +41 44 255 9585, Fax: +41 44 255 4401, Email: christian.templin@usz.ch



An 80-year-old male patient was referred to the emergency department with symptoms of unstable angina. An ECG revealed ST-segment depressions in leads V4–V6 and laboratory values showed an increased high-sensitive troponin level (0.016 ng/mL). Subsequent coronary angiography demonstrated a ruptured plaque in the left anterior descending (LAD) coronary artery (*Panel A*). Therefore, percutaneous coronary intervention was performed with the implantation of a bioabsorbable-vascular-scaffold (BVS, ABSORB, 3.5 × 18 mm). The implantation pressure was increased stepwise up to 12 atmospheres. The coronary blood flow was immediately restored to the TIMI III flow (*Panel B*). The patient was discharged to the coronary care unit (CCU) in a stable condition. Four hours later, the patient complained of acute severe chest pain with ST-segment elevations in leads V1–V6. Repeat coronary angiography documented an acute scaffold thrombosis (*Panel C*). After thrombectomy using a manual aspiration catheter, optical coherence tomography (OCT) was performed. Optical coherence tomography revealed marked thrombus material within the scaffold (*Panels E–H*; Supplementary material online, *Video S1*), potentially caused by incomplete strut apposition in several cross sections (*Panel H*, red arrows). Subsequent biolimus-eluting stent implantation (3.5 × 28 mm, 14 atmosphere) within the previously implanted BVS segment of the LAD was performed with a good final result after high-pressure balloon post-dilatation (3.5 × 12 mm, 22 atmosphere) (*Panel D*). The patient was transferred to the CCU and had an uneventful post-procedural course.

This is the first report of a thrombosis of a BVS in a patient with acute coronary syndrome (ACS), most likely due to incomplete scaffold expansion. As strut apposition of implanted scaffolds is not appropriately visible angiographically, it appears recommendable to perform OCT in such cases, particularly in elderly patients with calcified coronary lesions, and patients with ACS, to assess the procedural result.

Supplementary material is available at *European Heart Journal* online.